

Diabetes Tool Box Self Management

This section is designed to introduce the learner to diabetes, monitoring and why good control of diabetes is important.

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This educational material was developed using information from the following sources: The American Diabetes Association, The American Association of Diabetes Educators, The American Dietetic Association, and the American Association of Clinical Endocrinologists. As with any medical information, this is not to take the place of your provider's recommendations. Be sure to consult your healthcare provider regarding your individual diabetes treatment plan.

Introduction to Diabetes



What is diabetes?

Diabetes is a disorder of the metabolism. The body either lacks insulin, doesn't have enough insulin, or is not using the insulin properly

Type 1 diabetes is caused by an immune process that destroys the insulin producing cells. Those with type-1 diabetes always require insulin replacement. This usually means injections.

Type 2 diabetes is caused by insulin resistance and a relative lack of insulin. It can often be controlled with lifestyle changes, medication. However, it may require insulin injections as well. Type 2 is the most common form of diabetes.

Pre-Diabetes is a condition that can lead to Type 2 diabetes. During this phase the individual is developing resistance to insulin with blood sugars becoming higher than normal. This person is at risk of many of the same complications as the diabetic, including heart disease and stroke.

What is Insulin?

Insulin is a hormone produced in the 'beta cells' in the pancreas. It acts like a key to unlock the cell door. When the cell door is unlocked, blood sugar can enter. Insulin also helps to store the excess calories you take in.

What is Insulin Resistance?

Insulin resistance is a condition in which the body doesn't recognize or use the insulin properly. There are other terms for this: Impaired Glucose Tolerance (IGT), Insulin Resistance Syndrome, Syndrome X, or Metabolic Syndrome. It is often associated with high blood sugars, high blood pressure, high blood fats, increased weight or obesity, and increased waist measurement.

How do I reduce insulin resistance?

The best ways to reduce insulin resistance are to make positive changes in your lifestyle, by eating less, limiting simple carbohydrates, exercising more, managing stress, reducing your weight and your waistline.

What are the symptoms of diabetes?

Sometimes there are none	Increased thirst
Increased urination	Weight loss or gain
Fatigue	Slow healing
Frequent infections	Blurred vision

When is diabetes diagnosed?

Diabetes is diagnosed based upon a blood sugar level. It can be picked up when you have a fasting blood test or during routine lab testing. These are the guidelines your provider uses to diagnose either diabetes or pre-diabetes. Generally the fasting result should be checked twice to rule out lab error.

Blood Sugar	Fasting	2 hours After Eating
Normal	70-100	140 or less
Pre-Diabetes	100-125	141-199
Diabetes	126 or more	200 or more

What are the results of uncontrolled diabetes?

Uncontrolled high blood sugars cause damage to arteries and nerves. This can result in: heart disease leading to heart attacks, decreased awareness of chest pain signaling a heart problem, circulation problems in the brain, leading to strokes, kidney disease leading to kidney dialysis and kidney transplants, eye disease leading to blindness, erectile dysfunction, loss of feeling in the feet and hands leading to amputations, digestive problems, among others.



Monitoring

Who should monitor their blood sugars?

Everyone with diabetes should monitor his or her blood sugar. This is done by measuring a capillary blood glucose (CBG) using a blood sugar monitor. The values tell you how well your diabetes is controlled. Some professionals recommend that people with Pre-Diabetes also monitor their blood sugars.



Why should I monitor my blood sugars?

Monitoring your blood sugars will:

- Help in making decisions about your diabetes.
- Show patterns in order to identify ways to improve your numbers.
- Show the effects of food, activity, and medication.
- Show the effects of stress, illness, and infection.
- Confirm a low blood sugar.

Do you know how to use your blood sugar monitor?

If not, or if you have questions about monitoring:

- Read the instruction booklet that comes with your monitor.
- Call the Accu-Chek™ Company 1-800-858-8072, and ask for help or a video on how to use your meter.
- Ask for an appointment for a meter review session in the clinic.

How often should I monitor?

1. Check with your provider for instructions on how often and at what time of the day you should monitor your blood sugars.
2. How often you monitor depends upon: the type of medication you are taking, the treatment plan developed with your provider and the severity of your blood sugar problem, and other medical conditions you may have.
3. Test your blood sugars at different times of the day.
4. You'll usually test before a meal or before bedtime.
5. Occasionally you will need to monitor after eating. Wait 2 hours from your first bite, then test and record why you did this in the comment section of your log. This is a good way to evaluate what happens when you eat certain foods.
6. If you are on no diabetes medication, you may not need to test more than twice a week.

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7. If you take diabetes medications or pills, test twice a week, as long as your blood sugar numbers are stable and at your goal. See page 10
 8. If the numbers are too high, test every other day and notify your provider either through the VA Northwest Network Call Center, or by letter or by fax or email through MyHealthEVet program.
 9. If you are on multiple shots of insulin, you may need to test three times a day or more. If you are on insulin only at bedtime, and your numbers are stable and at goal, you may only need to test daily.

Is there a limit on the number of testing strips I receive?

Yes. It depends upon the type of treatment.

- | | |
|-----------------------------------|------------------------|
| ⊕ Stable diabetes on diet/pills | 50 strips for 150 days |
| ⊕ Unstable diabetes on diet/pills | 50 strips for 90 days |
| ⊕ Stable diabetes on insulin | 300 strips for 90 days |

If your provider decides that you need more strips to test more often, they can ask for an exception to the limitation.

Will I ever need more strips?

Yes. You may need to check your blood sugars more frequently, such as when your provider is adjusting or changing your medications or when your health changes, such as during times of illness or stress, or when your blood sugars are becoming uncontrolled.

How do I get more strips?

Call the pharmacy refill line, when you need more strips, control solutions, or lancets. If you need extra strips, beyond your strip limitation, call the VA Northwest Network Call Center and ask your provider for a temporary increase. Please let your provider know why you need the increase, uncontrolled blood sugars, due to illness, etc.

If you have other insurance or Medicare, parts A and B, you can ask your provider for a prescription to be filled outside of the VA at a local pharmacy under the other insurance.

Also, if you don't need reimbursement, you can purchase diabetes test strips on your own. The cost is around \$50 per bottle of 50 strips. Call outside pharmacies for the best price.

Changing The Time In Your Accu-Chek™ Meter

Why is it important to have the time correct in my Accu-Chek™ meter?

Always be sure you have a correct date/time in your meter, when you prepare to do a test. If you do not have a date and time set in your meter, you will not be able to use the memory to see when you did your blood sugar. Also your blood sugar readings will not be able to be “downloaded”. In addition, if the date and time is set incorrectly the information will be “downloaded” incorrectly. This is especially important if you do not use a logbook.

How often do I need to change the date and time?

You will need to reset the date and time,

- ⌚ When you change the battery,
- ⌚ Open the battery door,
- ⌚ Drop your machine,
- ⌚ Time changes like daylight savings in the spring and fall.

How do I set the date and time in my meter?

Follow the instructions in the manual, that came with your meter or call the Accu-Chek™ Company for instructions at 1-800-858-8072. If you are in clinic, ask the nurse to help you change the date and time.



Sharps Handling

What is a ‘sharp’?

Any syringe, needle, lancet, or sharp object that has the potential for having been in contact with blood or body fluids is considered a sharp.

How do I dispose of sharps?

Oregon and Washington law states that you cannot throw sharps into the regular trash. They must be disposed of in a “sharps container”.

“Sharps containers” should be used to dispose of any syringes, needles, lancets, used test strips, or any item that may be blood soiled from testing, such as cotton balls, tissue, alcohol wipes, etc.

Even if you do not use insulin, you still must have a sharps container to dispose of the lancets you use for testing.

There is a maximum penalty under law for a fine of up to \$10,000 per day of violation.

Where can I get a sharps container?

Most local pharmacies sell sharps containers. Some pharmacies in the Portland and Vancouver area will sell AND dispose of sharps containers for low or no cost. Call around for the best price and convenience.

Sharps containers are available where diabetic supplies are sold. At this time the Portland VA does not provide containers or dispose of containers.



If I Live In Portland?

Contact Metro for disposal information. Metro has a recycling program available for very low cost. Call 503-234-3000. There is a one-time fee, for an approved 1-gallon or 1-quart sharps container. Each time you bring in a full container to the hazardous waste facility for disposal, you will receive a new container for free. You can find out more about this program at: www.multnomah.lib.or.us/metro/rem/hazw/sharps.html

If I live in Vancouver?

Contact Waste Management at: 360-737-2425. In this program, there is a cost per sharps container, when the company picks this up with your regular garbage. They will need 24-hour notice that you are requesting this service. If you would like the company to provide the sharps container and dispose of the old container there is an additional fee. Waste Connection of Clark County does not provide any sharps services at this time.

If I live outside Portland/Vancouver?

Contact your garbage hauler, recycler, or the public health department for information.

Where can I find out more information about sharps?

For questions about sharps programs, call the environmental protection agency or go on-line: www.epa.gov/epaoswer/other/medical/sharps.htm



Trouble Shooting for Meter or Strip Problems

If you are having highs or lows that you can't explain, you need to make sure that your meter and strips are working properly. The blood sugar result you get on the new Accu-Chek™ meter is close to the result that the lab would get if we were to order a blood sugar test from the lab at the same time. However, your meter test results may be higher than you would get using other manufacturer's meters. Do not compare results from meter-to-meter.

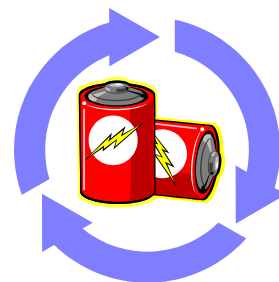
How do I get accurate test results?

- ☑ Make sure that the Code Chip number in the meter and on the strip bottle match. Toss the old code chip. There is no 'memory' in the chip. Check the expiration date on the bottle of strips. Be sure you are not using test strips that are out of date. You cannot be sure of any results from out dated strips.
- ☑ Don't use alcohol. Wash with warm soapy water prior to doing the finger stick. When you put the blood on the test strip, no yellow should be showing on the strip. Change the lancet each time you use it.
- ☑ Use the sides of your fingers. Get a good drop of blood. Do not compare finger-to-finger test results. There is always some variation.
- ☑ Do the quality control check with the meter and strips following the directions in your book. Do this each time you open a new bottle of strips or whenever you have questions about the accuracy of the blood sugar numbers. Call the meter company for help.
- ☑ Another way to check the accuracy of the blood sugar results is to have your blood sugar tested in the laboratory. Compare those results with the results from a finger stick blood sugar that is done at the same time as the lab test. The results from both tests should be very close.
- ☑ If you still have questions on the accuracy of your tests, after you have done all the steps above, call the meter company. The 800-phone number is on the back of your meter.

What Kind Of Batteries Do I Need?

Where Can I Get Them?

The VA is not responsible for replacing batteries. Depending on the model of your machine, they use either use 1 or 2 lithium or AAA batteries. Batteries are available at Radio Shack, Fred Meyer and the VA Canteen store.



What if my meter is damaged?

The Accu-Chek™ Company will replace a damaged or malfunctioning meter. Please call them for any meter problems or questions.

What happens if I lose my meter?

The VA pharmacy will replace one lost meter. Call the VA Northwest Network Call Center. If you lose the second meter, you may need to purchase the next one on your own.

Who can I call if I have problems with my meter?

Call Accu-Check™ Company: 1-800-858-8072. They are open 24 hours/day 7 days a week. If you have another meter from another company, they also have help lines. Call their 1-800 number, usually located on the meter itself.



Blood Sugar Goals

What is my blood sugar goal?

The American Diabetes Association (ADA) recommends these blood sugar levels:

Morning fasting: 90-130

After eating, during the day: 90-180

Your blood sugar goal may be different because of the stage of diabetes you have and your other medical conditions. None of these goals may be right for you, so your provider may set blood sugar goals specific for you.

This table gives you information about the different recommended blood sugar levels based upon the stage of your diabetes and your medical conditions. Always remember to check with your provider to identify your blood sugar goal.

Pre-Diabetic	The Healthy Diabetic	The Diabetic with Chronic Illness:	Individual Goal:
With no major medical problems	With No other medical problems	With other medical problems such as heart disease, strokes, seizures or elderly (over 80) and if you have no symptoms when experiencing a low	Check with your provider
Fasting 70 – 100	Fasting 90 – 130	Fasting 110 – 150	Fasting
Rest of the day 70 – 140	Rest of the day 90 – 180	Rest of the day 110 – 200	Rest of the day

What do I do if my blood sugars are not in goal range?

Try to figure out the reason for those numbers that are over or under your goal. Remember: lows are of more immediate concern than highs. For highs look for trends. If you are over 250 for several tests, and if you can't make a change in your diet or activity to get your blood sugar under control, and your meter and strips are good, then contact your doctor or nurse care manager.

What can affect my blood sugar?

This chart can give you some hints.



What can raise my blood sugar

Too much food

Not enough exercise

Infections, surgeries

Forgetting your diabetes medications

Stress, pain

A severe low blood sugar (rebound)

Sugar or starch on fingertips

Some medications such as steroids can raise blood sugars.

Not enough blood on the strip, yellow showing



What can lower my blood sugar

Too little food

Exercise

Returning to health after infections, etc

Diabetes medications

Taking too much of your diabetes medications

Alcohol can cause a severe low

Some medications can make your diabetes medications work better, and can lower blood sugars.

To send in blood sugar readings, use the Self Report and Blood Sugar Record on page 20 and 21.

Blood Sugar Patterns

How do I identify a pattern?

1. Use a Logbook or log sheet. Record the information in columns so it is easy to compare the same time each day. Test at different times of the day. We suggest the following times:
 - ❖ Before meals and at bedtime
 - ❖ Two (2) hours after the meal or a particular food
 - ❖ Before and after exercise
 - ❖ When you don't feel well
2. Circle or highlight all of the blood sugars that are higher than your goal in one color of highlighter, such as green.
3. Circle or highlight all of the blood sugars that are lower than your goal, with another color highlighter such as pink.
4. Look for a pattern of blood sugars that are too high or too low.

What is an example of a pattern I should look for?

Examples of patterns

Low before lunch

Low after a walk or working in the yard

High after eating certain foods

High in the morning

am	noon	pm	bed
135	65	92	131
140	134	69	129
120	126	127	250
199	117	148	123

How do I change a blood sugar pattern?

1. Decide what happened prior to the numbers you highlighted. Did you eat a different food, or too much, or make a change in your activity or miss a diabetic medication, etc.
2. Ask yourself what you could do the next time so that you are within your goal when this situation happens again.
3. If you can identify a change you can make on your own, such as changing the problem food, or taking a snack for walks, then make the change.
4. If there is nothing that you can do and the pattern continues, contact your primary care provider or nurse care manager. You may need a change in your diabetes medication regimen.

How do I get a Log Book?

Call the Accu-Check Meter Company. See the Blood Sugar Record on page 20.

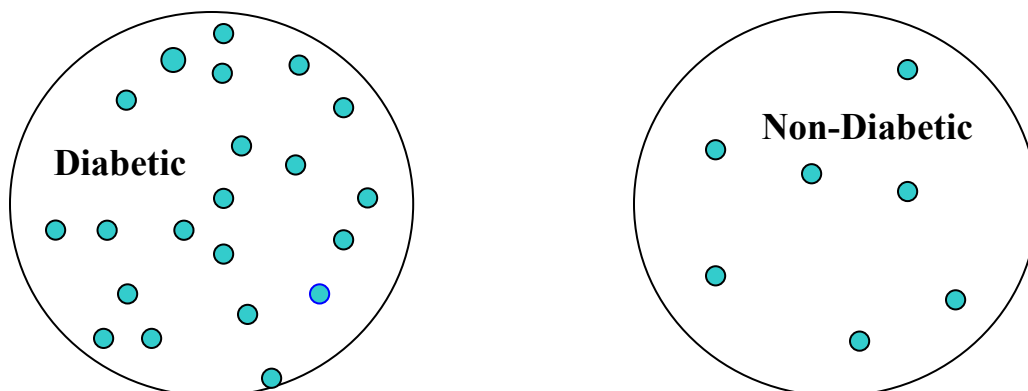
Hemoglobin A1C

A1C is short for Glycosolated hemoglobin or Hemoglobin A1C. It is used as a measure of your overall diabetes control. It measures your average blood sugar reading over the past 3 to 4 months. It is like a “batting average” for your blood sugars. It is used in combination with your daily readings to determine how well controlled your diabetes is.

How does the A1C come up with this "batting average?"

Sugar or glucose attaches to the hemoglobin in the red cells in your blood. The higher your blood sugar level, the more sugar coating there is on the hemoglobin and therefore the higher the A1C will be.

A hemoglobin molecule with sugar attached in a diabetic and a non-diabetic.



What is a "normal " A1C?

“Normal” values for people without diabetes varies with different labs. An A1C of 3.4 to 6.1 is considered "normal" at our lab.

What should my A1C be?

Your goal is to be under 7.0. You and your provider should identify your specific goal. An excellent range is usually between 6 and 7. For the elderly or those who are chronically ill, the goal may be slightly higher. However a measure over 8 indicates that your treatment needs to be changed.

What can affect my A1C?

Besides blood sugar, the A1C can be affected if your hemoglobin is low. So if you have anemia the A1C may appear to be lower.

What other methods of determining blood sugar control exist?

Fructosamine, also known as: Glycated Serum Protein or GSP indicates blood sugar control over a short to intermediate time period, about 1-3 weeks.

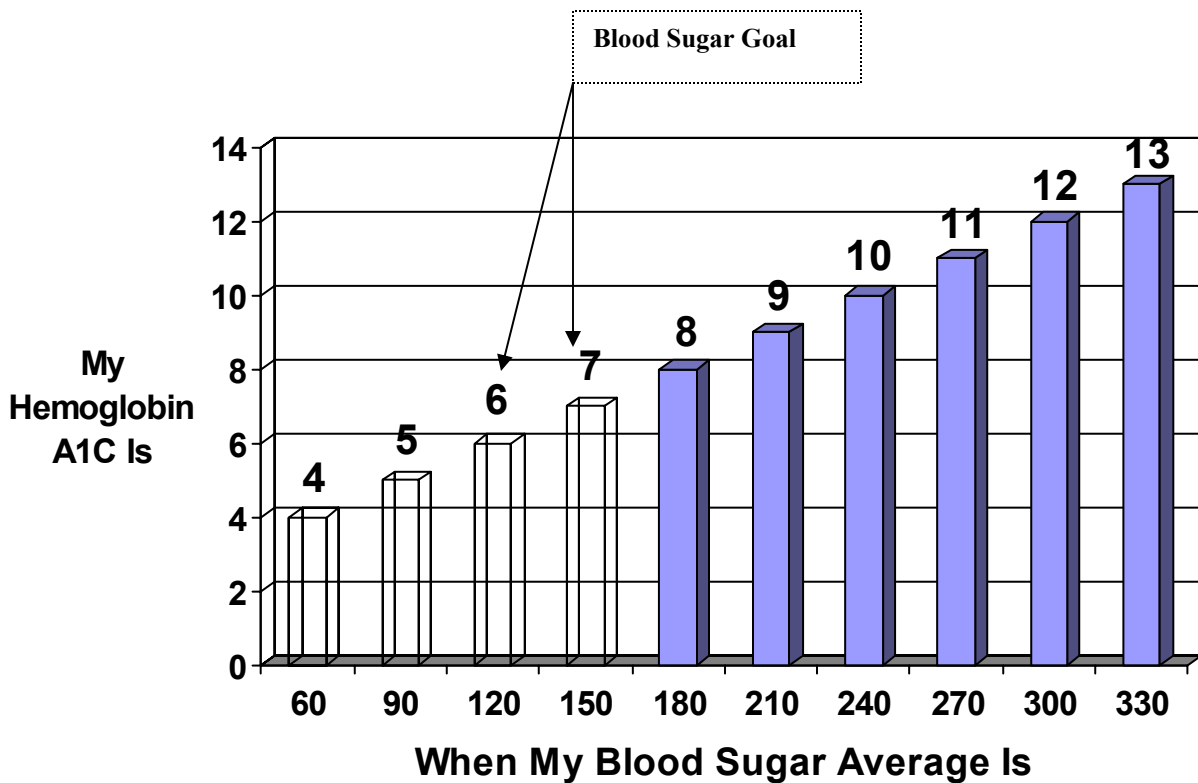


Remember:

Your A1C is like a “3 month batting average” of your blood sugars.

Comparison of A1C and Blood Sugar Levels

This chart tries to show you how your average blood sugar levels relate to your A1C. As your average blood sugar increases, your A1C increases!



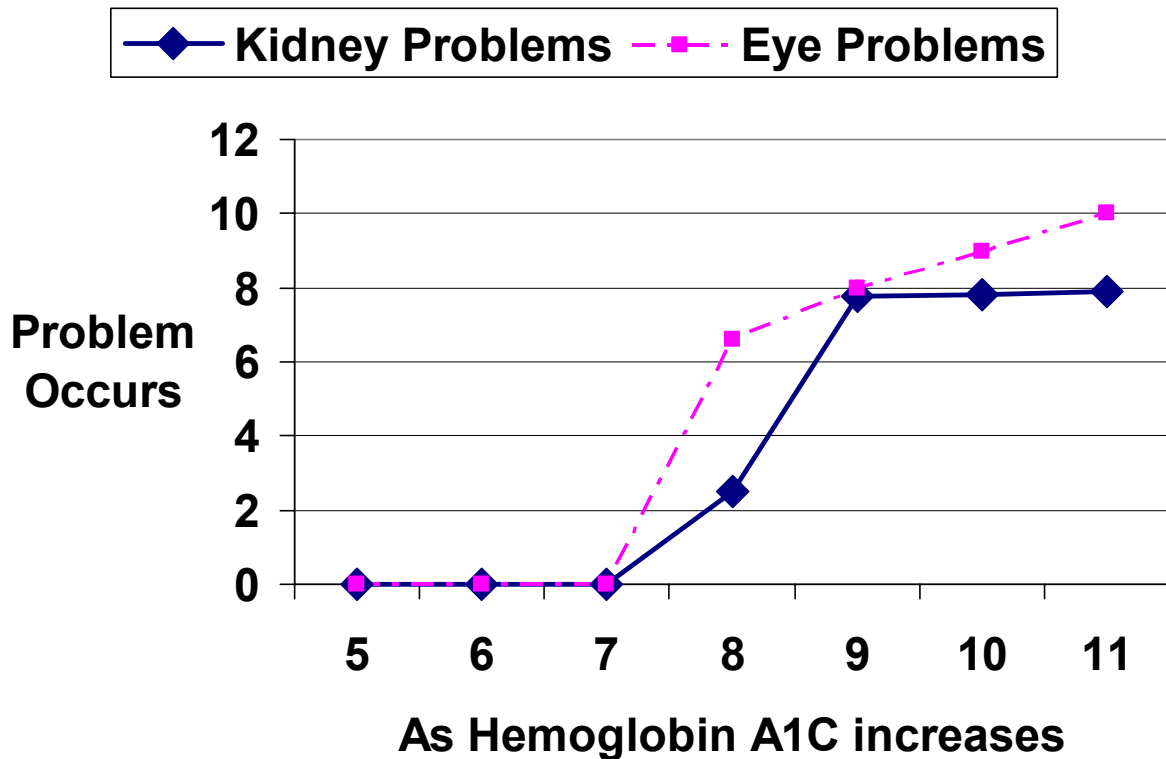
What is the goal for my A1C?

For most diabetics an A1C between 6.0 and 7.0 is ideal. 8.0 or above means some work is needed. If you are lower than 6.0 and on insulin, this could mean you are having some worrisome low readings.

Does control of my blood sugar matter?

Yes. For every 1-point you reduce your A1C, you reduce your risk of developing diabetic complications by up to 40%. See page 2 section titled: What are the results of uncontrolled diabetes?

Why Is Good Control Important



This chart shows that the higher your A1C level is, the more likely you will have complications. In this example they looked at kidney and eye problems.

Over time, poor control of your blood sugars will increase your risk of developing eye and kidney damage. Risk of other complications will also increase.

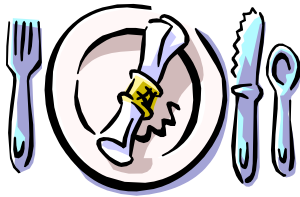
Long-term good blood sugar control can reduce your risk of problems associated with diabetes.

Key Points to Remember!

- Keep your blood sugars below 150
- Keep your A1C below 7



Ways to Manage My Diabetes



Food



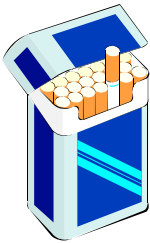
Activity



**Foot
Exams**



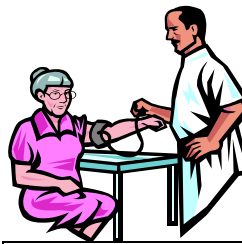
Check Sugars



Smoking



Alcohol



Check Ups



**Other
Things**

These topics are very important to your health. No patients do these perfectly. It's best to work on one at a time. You won't be pushed into changing. Which one do you want to discuss?

1. My diabetes:

A1C goal: _____ My Lipid goal: _____ My BP goal: _____

2. My specific goal is to:

3. The steps I plan to take in changing are:

Ways to Manage My Diabetes, continued

4. **Challenges that might interfere:**

5. **How I will handle these challenges:**

6. **I will know my plan is working if:**

Remember: Ask for help to identify some reasonable goals

My Self-Report Form

Name: _____ Today's date: _____

Last 4: _____ Date of birth: _____

You can reach me at my Phone Number: _____

1. How am I feeling lately? Do I have any signs of an infection? _____

2. Have I have noticed any problems or unusual stress lately and explain? _____

3. How have I changed my schedule of eating, exercise, or work? _____

4. How often do I skip a meal or snack and which one? _____

5. Have I changed the amount of eating or exercise and explain? _____

6. At what numbers are my blood sugars supposed to be? _____

90-190

110-200

Other:

Usual amounts and types of food on a typical day

Breakfast - time:

This is what I usually eat:

Lunch - time

This is what I usually eat:

Dinner - time

This is what I usually eat:

Snacks - time

This is what I usually eat:


Exercise – time:

This is what I usually do:

How much and what type of **beverages**: _____

How much and what type of **alcohol**: _____

How much **tobacco**: _____

My Blood Sugar Record						Last 4:
Name:						Last 4:
Blood Sugar Numbers 					Blood Sugar Goals AM PM Healthy Diabetic 90-130 90-190 Chronic Illness 110-140 110-200	
Note times of testing next to blood sugars						
Date	Morning	Noon	Evening	Bedtime	Night	Comments Please
How much diabetes medicine did you take?	Morning	Noon	Evening	Bedtime	Please Indicate If you missed any of your medications OR "adjusted" your medications tell us how you did it in the "Comments Please"	
1. What do you think caused the low readings?						
2. What did you do to treat the low blood sugar readings?						
3. What could you have done to avoid the low blood sugar readings?						
4. What do you think may have caused the high blood sugar readings?						
5. What could you have done to avoid the high blood sugar readings?						